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# ON-SITE CHILD SAFETY SEAT INVESTIGATION

CASE NUMBER - IN08005
LOCATION - ILLINOIS
VEHICLE - 2000 PLYMOUTH NEON LX
CRASH DATE - December 2007

Submitted:

October 15, 2008



Contract Number: DTNH22-07-C-00044


Prepared for:

U.S. Department of Transportation
National Highway Traffic Safety Administration
National Center for Statistics and Analysis
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The crash investigation process is an inexact science which requires that physical evidence such as skid marks, vehicular damage measurements, and occupant contact points be coupled with the investigator's expert knowledge and experience of vehicle dynamics and occupant kinematics in order to determine the pre-crash, crash, and post-crash movements of involved vehicles and occupants.

Because each crash is a unique sequence of events, generalized conclusions cannot be made concerning the crashworthiness performance of the involved vehicle(s) or their safety systems.

**Technical Report Documentation Page**

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| 15. *Supplementary Notes*<br>On-site child safety seat investigation involving a 2000 Plymouth Neon LX. | | | |
| 16. *Abstract*<br>This report covers an on-site Child Safety Seat (CSS) investigation that involved a 2000 Plymouth Neon LX and a 2006 Ford Explorer XLT, which were involved in an intersection collision. This case focused on the child occupant (2-year-old, male) who was seated within a Cosco Alpha Omega convertible CSS that was installed in the forward facing position in the Plymouth's second row center position. The child was restrained within the CSS by the 5-point internal harness system. The Plymouth was stopped for the traffic signal at a 4-leg intersection and the Ford was traveling north approaching the intersection. The Plymouth's driver accelerated from the stopped position to turn left onto the southbound roadway as the Ford passed through the intersection. The front of the Ford impacted the left front of the Plymouth and both vehicles came to rest within the intersection heading in a nominal northwest direction. All of the Plymouth's six occupants were restrained except an 8-year-old female, who was seated on the lap of the adult second row left passenger. All of the occupants were transported to a hospital. The second row center passenger was not injured, although he was transported to the emergency room for observation and then released. The driver and second row left passenger were treated and released and the remaining three occupants were hospitalized. Both vehicles were towed due to damage. | | | |
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This crash was brought to National Highway Traffic Safety Administration's attention on or before January 7, 2008 by the sampling activities of the National Automotive Sampling System. The crash involved a 2000 Plymouth Neon LX (**Figure 1**) and a 2006 Ford Explorer XLT. The crash occurred in December 2007, at 0105 hours, in Illinois and was investigated by the applicable city police department. This crash is of special interest because the Plymouth's second row center passenger (2-year-old, male) was seated in a Cosco Alpha Omega child safety seat (CSS). This contractor inspected the Plymouth and interviewed the Plymouth's driver on February 19, 2008, and inspected the scene on February 20, 2008. The Ford had been repaired and was not inspected. This report is based on the police crash report, an interview with the Plymouth's driver, scene and vehicle inspections, occupant medical records, occupant kinematic principles, and this contractor's evaluation of the evidence.

**Figure 1:** The damaged 2000 Plymouth Neon LX

## CRASH CIRCUMSTANCES

***Crash Environment:*** This crash occurred within a 4-leg urban intersection that was controlled by multiple 3-phase traffic signals. The trafficway on which the Plymouth was traveling was a level, 4-lane, undivided, city street that traversed in a northeasterly-southwesterly direction, and the Plymouth was traveling southwest. The southwesterly roadway consisted of one through/left turn lane and one left turn lane (**Figure 2**). Each lane was nominally 3.5 meters (11.5 feet) in width and the pavement markings consisted of a solid white lane line, solid yellow double centerline, and a solid white stop bar at the intersection. The trafficway on which the Ford was traveling was a 7-lane, undivided, city street that traversed in a north-south direction, and the Ford was traveling north (**Figure 3**). The north roadway consisted of one right turn lane, two through lanes, and a left turn lane. Each lane was nominally 3.1 meters (10.2 feet) in width and the roadway had a positive 1.3% grade. The pavement markings consisted of broken white lane lines, white left turn only arrows, and a double yellow centerline. The posted speed limit for both vehicles was 48 km/h (30 mph). At the time of the crash, the light condition was dark with overhead lighting, the atmospheric condition was foggy, and the roadway pavement was dry bituminous. The traffic density was light and the site of the crash was urban commercial. See the crash diagram on page 12 of this report.

**Figure 2:** Wide view of the intersection from the direction of the Plymouth's approach

***Pre-Crash:*** The Plymouth was occupied by a 39-year-old restrained male driver, and five passengers. All of the passengers were restrained with the exception of an 8-year-old female, who was sitting on the lap of her 41-year-old father in the second row left seating position. The Ford was occupied by a 39-year-old restrained female driver and a 24-year-old restrained female front right passenger. The Plymouth was stopped at the intersection in the outside lane heading southwest. The traffic signal changed to green and the driver proceeded to turn left and travel south. The Ford was northbound in the left through lane and continued through the red signal into the intersection.

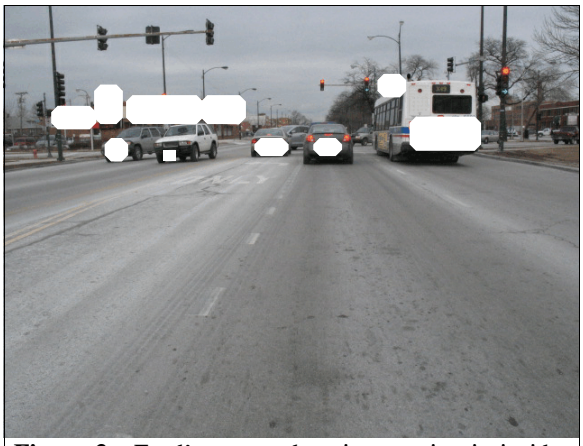


**Figure 3:** Ford's approach to intersection in inside northbound lane

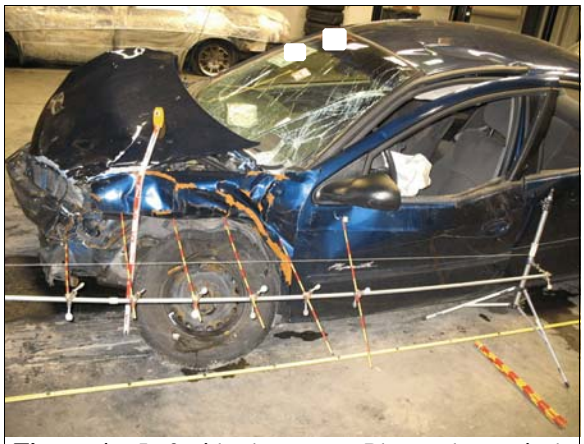


**Figure 4:** Left side damage to Plymouth; vertical scale in tenths of meter; each increment on measurement rods is 5 cm (2 in); each black mark on tape measure is 0.3 meter (1 foot)

***Crash:*** The front of the Ford impacted the left front of the Plymouth (**Figure 4**, event 1). The direction of principal force was within the 11 o'clock sector on the Plymouth and the impact force was sufficient to deploy the driver's and front right passenger's frontal air bags. The police crash report indicated that the Ford's driver and front right passenger frontal air bags also deployed. The impact caused the Ford to rotate counterclockwise and the Plymouth to rotate clockwise. The scene inspection revealed no evidence of the final rest positions of either vehicle and the police crash schematic did not depict their final rest positions. Based on the damage to the Plymouth and experience with similar crashes, both vehicle's probably came to final rest within the intersection heading northwest.

***Post-Crash:*** The Plymouth's driver and front right passenger exited the vehicle without assistance through the right front door. A bystander assisted the second row right passenger out of vehicle through the right rear door. The second row center passenger was also removed through the right rear door. The second row left passenger assisted his daughter, who had been sitting on his lap, and they both exited through the right rear door. Police and emergency personnel responded to the scene and traffic control was established. The Plymouth's driver, front right passenger, second row left adult passenger, and two of the three second row child passengers were transported by ambulance to a hospital. The second row right child passenger was transported by a family friend from the scene to a hospital. The Ford's driver and front right passenger refused treatment and were not transported. Both vehicle's were towed from the scene due to damage.

The 2000 Plymouth Neon LX was a front wheel drive, 4-door sedan (VIN:1P3ES 46C2YD------) equipped with a 2.0 L, I-4 engine and a 3-speed automatic transmission. The front row was equipped with driver and front right passenger redesigned frontal air bags, bucket seats with adjustable head restraints and lap-and-shoulder belts with adjustable upper anchors. The second row was equipped with a bench seat with folding backs, integral head restraints and lap-and-shoulder belts at the outboard seating positions, and a lap belt at the center seating position. The Plymouth was not equipped with Lower Anchors and Tethers for Children (LATCH) at any seating position. The vehicle's mileage at the time of the inspection was 138,132 kilometers (85,834 miles) and the specified wheelbase was 267 centimeters (105.1 inches).

**CASE VEHICLE DAMAGE**

***Exterior Damage:*** The Plymouth's impact with the Ford involved the left side plane. The left fender, left headlamp/turn signal assembly, hood, left front wheel, left portion of the front bumper, and the front portion of the left front door were directly damaged (**Figure 4**). The direct damage began 210 centimeters (82.7 inches) forward of the left rear axle and extended 107 centimeters (42.1 inches) forward along the left side. The crush measurements were taken along the upper door level and the residual maximum crush was measured as 43 centimeters (16.9 inches) occurring at $C_6$. The table below shows the vehicle's left side crush profile.

| Units | Event | Direct Damage | | Field L | $C_1$ | $C_2$ | $C_3$ | $C_4$ | $C_5$ | $C_6$ | Direct | Field L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Width CDC | Max Crush | | | | | | | | ±D | ±D |
| cm | 1 | 107 | 43 | 107 | 6 | 16 | 30 | 34 | 36 | 43 | 131 | 131 |
| in | | 42.1 | 16.9 | 42.1 | 2.4 | 6.3 | 11.8 | 13.4 | 14.2 | 16.9 | 51.6 | 51.6 |

The left side wheelbase was reduced 9 centimeters (3.5 inches) while the right side wheelbase was extended 1 centimeter (0.4 inch). The induced damage involved the left A-pillar, left front and rear doors, hood, right fender, right headlamp/turn signal assembly, and the roof.

***Damage Classification:*** The Plymouth's Collision Deformation Classification (CDC) was **11-LYEW-3** (**320** degrees) for the impact with the front of the Ford (event 1). The Missing Vehicle algorithm of the WinSMASH program calculated the Plymouth's total Delta V as 25 km/h (15.5 mph). The longitudinal and lateral velocity changes were -19.2 km/h (-11.9 mph) and 16.1 km/h (10.0 mph), respectively. The results were based only on the Plymouth's crush profile and should be considered a borderline reconstruction.

The manufacturer's recommended tire size was P185/60R15. The Plymouth was equipped with P195/70R14 size tires. The vehicle's tire data are shown in the table below.

| *Tire* | *Measured Pressure* | | *Vehicle Manufacturer's Recommended Pressure* | | *Tread Depth* | | *Damage* | *Restricted* | *Deflated* |
|---|---|---|---|---|---|---|---|---|---|
| | kPa | psi | kPa | psi | milli-meters | 32nd of an inch | | | |
| LF | Flat | Flat | 221 | 32 | 6 | 8 | Hole in sidewall | Yes | Yes |
| LR | 179 | 26 | 221 | 32 | 7 | 9 | None | No | No |
| RR | 200 | 29 | 221 | 32 | 7 | 9 | None | No | No |
| RF | 269 | 39 | 221 | 32 | 6 | 8 | None | No | No |

***Vehicle Interior:*** Inspection of the Plymouth's interior revealed a dent in the left front door arm rest from contact with the driver's left hip. There was no other discernable evidence of occupant contact. The instrument panel was buckled as a result of the exterior deformation. The steering assembly was in the full up position and the adjuster was jammed, which appeared to be the result of the instrument panel buckling and not due to occupant contact. There was no deformation to the steering wheel (**Figure 5**) or compression of the energy absorbing steering column and there were no occupant compartment intrusions. The left front and rear doors were jammed shut. The right front and rear doors remained closed and operational. All of the side windows were closed and the left front and rear window glazing disintegrated due to impact forces.

**Figure 5:** Left side view of the Plymouth's steering wheel showing lack of deformation of the steering wheel rim

**AUTOMATIC RESTRAINT SYSTEM**

The Plymouth was equipped with driver and front right passenger redesigned frontal air bags. The driver's air bag was located within the steering wheel hub. An inspection of the single air bag module cover flap revealed that it opened at the designated tear points. The cover flap was constructed of pliable vinyl and was 21 centimeters in width and 17 centimeters in height. The air bag was round with a diameter of 63 centimeters (25 inches) and had two vent ports located within the 12 o'clock sector. Inspection of the cover flap and the air bag revealed no evidence of damage to the air bag or the cover flap, and there was no evidence of occupant contact.

The front right passenger's air bag was located within the middle of the instrument panel. The single air bag module cover flap was constructed of pliable vinyl and was 32 centimeters (12.6

inches) in width and 17 centimeters (6.7 inches) in height. The cover flap opened at the designated tear points and was not damaged. The front right passenger's air bag was rectangular and was 42 centimeters (16.5 inches) in width and 60 centimeters (23.6 inches) in height. Inspection of this air bag's fabric revealed no evidence of damage and a few small blood stains, which appeared to be the result of blood splatter and not contact to the air bag. There was no evidence of occupant contact to the air bag.

## MANUAL RESTRAINT SYSTEM

The Plymouth was equipped with lap-and-shoulder belts for all outboard seating positions and a lap belt for the second row center seating position. The driver's seat belt consisted of continuous loop belt webbing, a sliding latch plate, an Emergency Locking Retractor (ELR), and an adjustable upper anchor that was in the full down position. The front right seat belt was similar but had a switchable ELR/Automatic Locking Retractor (ALR) and a light weight locking latch plate. Its adjustable upper anchor was in the full up position. The second row outboard seat belts were of the same type as the front right seat belt with the exception of a non-adjustable upper anchor. The second row center lap belt was equipped with a locking latch plate.

The inspection of the driver's seat belt assembly revealed no evidence of loading. Despite the lack of evidence, the driver was probably restrained because she reported belt pattern bruising across her hips, abdomen, and left shoulder.

The inspection of the front right passenger's seat belt assembly revealed a load mark on the webbing (**Figure 6**), which also had a slight stretched appearance to it. The evidence indicated that the front right passenger was restrained by the lap-and-shoulder belt.

**Figure 6:** Load mark (between yellow tape) on Plymouth's front right passenger's seat belt

The inspection of the second row left and right seat belt assemblies revealed no evidence of loading. The driver stated that the occupants seated in these positions were restrained by the lap-and-shoulder belt.

The inspection of the second row center lap belt (**Figure 7**) revealed no evidence of loading. This belt was used to secure the CSS. The driver stated during the interview that she routed the lap belt through the belt paths on the back of the CSS and pulled the belt tight to secure it in the vehicle.

**Figure 7:** Plymouth's second row center lap belt, which was used to secure the CSS

The Plymouth's second row center passenger [2-year-old, male; 91 centimeters and 13 kilograms (36 inches, 28 pounds)] was seated in a Cosco Alpha Omega convertible CSS (**Figure 8**), which was being used in the forward facing position. There was no label on the CSS indicating model number or date of manufacture. When used in the forward facing position, the CSS was designed for children who weigh 10-18 kilograms (22-40 pounds).

**Figure 8:** The Cosco Alpha Omega CSS

The CSS was equipped with a five-point harness with a retainer clip, two latch plates, a non-recessed buckle, and one set of harness slots located in the back of the CSS. The harness strap was adjustable via a sliding bracket that was equipped with five detent settings, and the adjuster was set to the middle detent position. The harness straps were twisted in the harness retainer clip and in both latch plates, and were in a knot at the sliding bracket on the seat back. The driver stated she secured the second row center passenger in the CSS with the five-point harness and the harness retainer clip was positioned at the child's arm pit level.

The CSS was constructed of a one piece plastic shell and was fitted with a cloth covered foam pad. Inspection of the CSS revealed three minor stress marks in the plastic, one at the lower right portion of the shell and two on the left side. Otherwise, the CSS was intact and unremarkable.

## CASE VEHICLE DRIVER KINEMATICS

The Plymouth's driver [39-year-old, female; 157 centimeters and 73 kilograms (62 inches, 160 pounds)] was seated in an upright posture with her back against the seat back, left foot on the floor, right foot on the accelerator, and both hands in on the steering wheel rim. The seat track was located in the center position and the seat back was slightly reclined. The driver did not know what the tilt steering column adjustment was in at the time of the crash. The driver was not wearing glasses or contact lenses and was restrained by the lap-and-shoulder belt.

The Plymouth's impact with the Ford displaced the driver forward and to the left opposite the 11 o'clock direction of principal force. The driver loaded her seat belt and her left hip loaded the left front door arm rest. The interaction with the seat belt caused a contusion on the left shoulder and across both hips and lower abdomen. The contact with the left front door arm rest

caused a large contusion on the left thigh that extended from the hip to above the knee. The driver stated she also sustained contusions to both knees, a strained right ankle, and small lacerations on the tops of her fingers on both hands. Even though there was no discernable occupant contact evidence, the knee contusions probably resulted from loading the knee bolster and the strained right ankle probably resulted from loading the toe pan. The small lacerations on the finger's of both hands were probably the result of flying glass particles from the disintegrated left front window glazing.

## CASE VEHICLE DRIVER INJURIES

The driver refused treatment and rode in the ambulance with her children to the hospital. Once at the hospital she decided to be examined and was treated in the emergency room for minor injuries and released. The table below shows the driver's injuries and injury sources.

| Injury Number | Injury Description (including Aspect) | NASS Injury Code & AIS 90 | Injury Source | Source Confidence | Source of Injury Data |
|---|---|---|---|---|---|
| 1 | Contusion {bruising} across hips/ abdomen, not further specified | minor 590402.1,8 | Lap portion of safety belt system | Certain | Interviewee (same person) |
| 2 | Contusion {bruising}, slight, upper shoulder, not further specified | minor 790402.1,2 | Torso portion of safety belt system | Certain | Interviewee (same person) |
| 3 | Lacerations {cuts}, small on dorsum {top} of fingers | minor 790602.1,3 | Noncontact injury: flying glass, left front glazing | Probable | Interviewee (same person) |
| 4 | Contusion {bruising} along left lateral {outside} thigh from hip to above left knee | minor 890402.1,2 | Left side interior hardware and/or armrest | Certain | Interviewee (same person) |
| 5 | Contusions {bruises}, 10.2 cm (4 in) bilateral knees | minor 890402.1,3 | Left lower instrument panel and/or knee bolster | Probable | Interviewee (same person) |
| 6 | Sprain {strained} left ankle, not further specified | minor 850206.1,2 | Floor, including toe pan | Probable | Interviewee (same person) |

## CASE VEHICLE FRONT RIGHT PASSENGER KINEMATICS

The Plymouth's front right passenger [15-year-old, female; 160 centimeters and 54 kilograms (63 inches, 120 pounds)] was seated in an upright posture with her back against the seat back, her feet on the floor and her hands in an unknown position. Her seat track was located in the center position and the seat back was slightly reclined. The passenger was not wearing glasses or contact lenses and was restrained by the lap-and-shoulder belt.

The impact displaced the front right passenger forward and to the left opposite the 11 o'clock direction of principal force and she loaded the seat belt. She sustained a contusion on the outside of her lower left leg that was 15 centimeters in length (6 inches). No discernable occupant contact evidence for this injury was observed within the vehicle; however, based on occupant kinematics principles, the injury source was probably the center console. She also sustained a nonanatomic brain injury, small abrasions on the top of her fingers of both hands, and a contusion on the inside of the right knee. No occupant contact evidence relating to these injuries was observed within the vehicle. Occupant kinematic principles indicate that the nonanatomic brain injury and the finger abrasions were the result of contact with the deployed front right air bag. The right knee contusion was probably the result of the inside of the passenger's knees contacting each other when her left lower leg loaded the center console.

## CASE VEHICLE FRONT RIGHT PASSENGER INJURIES

The front right passenger sustained a moderate head injury and minor soft tissue injuries and was admitted to the hospital for one day for observation. The table below shows the front right passenger's injuries and injury sources.

| Injury Number | Injury Description (including Aspect) | NASS Injury Code & AIS 90 | Injury Source | Source Confidence | Source of Injury Data |
|---|---|---|---|---|---|
| 1 | Nonanatomic brain injury with brief loss of consciousness | moderate 160406.2,0 | Air bag, front right passenger's | Possible | Hospitalization records |
| 2 | Abrasions, superficial {minor} on dorsum {top} on fingers, bilaterally | minor 790602.1,3 | Air bag, front right passenger's | Probable | Emergency room records |
| 3 | Contusion {bruise}, 10.2 cm (4 in) medial {inside} right knee | minor 890402.1,1 | Occupant's left medial knee | Probable | Interviewee (driver) |
| 4 | Contusion {brusing}, 15.2 cm (6 in) lateral lower left leg | minor 890402.1,2 | Interior, center console | Probable | Hospitalization records |

## CASE VEHICLE SECOND ROW LEFT PASSENGER KINEMATICS

The Plymouth's second row left passenger [41-year-old, male; 165 centimeters and 68 kilograms (65 inches, 150 pounds)] was restrained by the lap-and-shoulder belt and was seated in an upright position with his unrestrained 8-year-old daughter sitting on his lap. He was seated with his back against the seat back and his feet on the floor.

The impact displaced the second row left passenger forward and to the left within the seat belt opposite the 11 o'clock direction of principal force. The impact disintegrated the left rear window glazing and glass fragments impacted his face causing two lacerations on the forehead and a laceration on the right temple and left cheek. He also sustained a contusion on the left orbit,

which was possibly the result of contacting the back of the passenger's head who was sitting on his lap.

## CASE VEHICLE SECOND ROW LEFT PASSENGER INJURIES

The second row left passenger sustained minor injuries and was treated in a hospital emergency room and released. The table below shows the passenger's injuries and injury sources.

| Injury Number | Injury Description (including Aspect) | NASS Injury Code & AIS 90 | Injury Source | Source Confidence | Source of Injury Data |
|---|---|---|---|---|---|
| 1 | Laceration {cut} on right temple area | minor 190602.1,1 | Noncontact injury: flying glass, left rear glazing | Probable | Emergency room records |
| 2 | Lacerations {cuts} x 2: one diagonally above left eye; one, 5.1 to 7.6 cm (2-3 in) vertically on forehead | minor 290602.1,7 | Noncontact injury: flying glass, left rear glazing | Probable | Emergency room records & Interviewee (driver) |
| 3 | Laceration 1 cm (0.4 in) below left eye on left cheek | minor 290602.1,2 | Noncontact injury: flying glass, left rear glazing | Probable | Emergency room records |
| 4 | Contusion {ecchymosis} left orbit with swelling left eye | minor 297402.1,2 | Posterior head of on-lap occupant | Possible | Emergency room records |

## CASE VEHICLE SECOND ROW OTHER PASSENGER KINEMATICS

The Plymouth's second row other passenger [8-year-old, female;122 centimeters and 22 kilograms (48 inches, 49 pounds)] was unrestrained seated on the lap of the second row left passenger. Her left elbow was propped on the window sill and she was leaning her head on her left hand. Her feet did not touch the floor.

As a result of the impact, the passenger was displaced forward and to the left opposite the 11 o'clock direction of principal force. The passenger sustained a diagonal laceration on the forehead and an abrasion on the left knee. There was no discernable evidence of occupant contact within the second row left seating area; however, it is probable that her upper torso loaded the driver's seat back and her head contacted the left B-pillar, which caused the laceration. The left knee abrasion was probably the result of contact to the back of the driver's seat.

## CASE VEHICLE SECOND ROW OTHER PASSENGER INJURIES

The second row other passenger sustained minor injuries and was admitted to a hospital for one day for observation. She received one follow-up visit to a doctor and no additional injuries were diagnosed. The passenger's injuries and injury sources are shown in the table below.

| Injury Number | Injury Description (including Aspect) | NASS Injury Code & AIS 90 | Injury Source | Source Confidence | Source of Injury Data |
|---|---|---|---|---|---|
| 1 | Laceration, deep, 4 cm (1.6 in), exposing skull, diagonally oriented starting on forehead above left eye | minor 290602.1,7 | Left B-pillar | Probable | Hospitalization records |
| 2 | ending above hairline on left scalp | 190602.1,5 | | | Interviewee (driver) |
| 3 | Abrasion left knee, not further specified | minor 890202.1,2 | Seat back, driver's | Probable | Hospitalization records |

**CASE VEHICLE SECOND ROW CENTER PASSENGER KINEMATICS**

The Plymouth's second row center passenger [2-year-old, male; 91 centimeters and 13 kilograms (36 inches, 28 pounds)] was seated in an upright position restrained in a CSS. He was holding a bottle and leaning back in the CSS.

The second row center passenger remained restrained in the CSS throughout the crash sequence. There was no discernable occupant contact evidence on the CSS and the passenger sustained no injury as a result of the crash.

**CASE VEHICLE SECOND ROW CENTER PASSENGER INJURIES**

The driver stated that the second row center passenger was held for observation in the emergency room for approximately 12 hours. No injuries were diagnosed and the passenger was released. The passenger also received one follow-up visit to a doctor and was released from further medical care.

**CASE VEHICLE SECOND ROW RIGHT PASSENGER KINEMATICS**

The Plymouth's second row right passenger [6-year-old, female; 114 centimeters and 18 kilograms (45 inches, 39 pounds)] was seated in an upright position with her back against the seat and her feet dangling off the front of the seat. She was restrained by the lap-and-shoulder belt.

As a result of the impact, the passenger was displaced forward and to the left opposite the 11 o'clock direction of principal force. There was no evidence that she contacted any interior surfaces or objects during the crash; however, the driver stated that the passenger was somewhat disoriented and had a glazed look in her eyes following the crash. It is possible that her head contacted the right side of the second row center CSS, which caused a blunt head trauma.

The second row right passenger was admitted to the hospital for observation and remained there for two days. She received one follow-up visit to a doctor and no additional injuries were diagnosed.

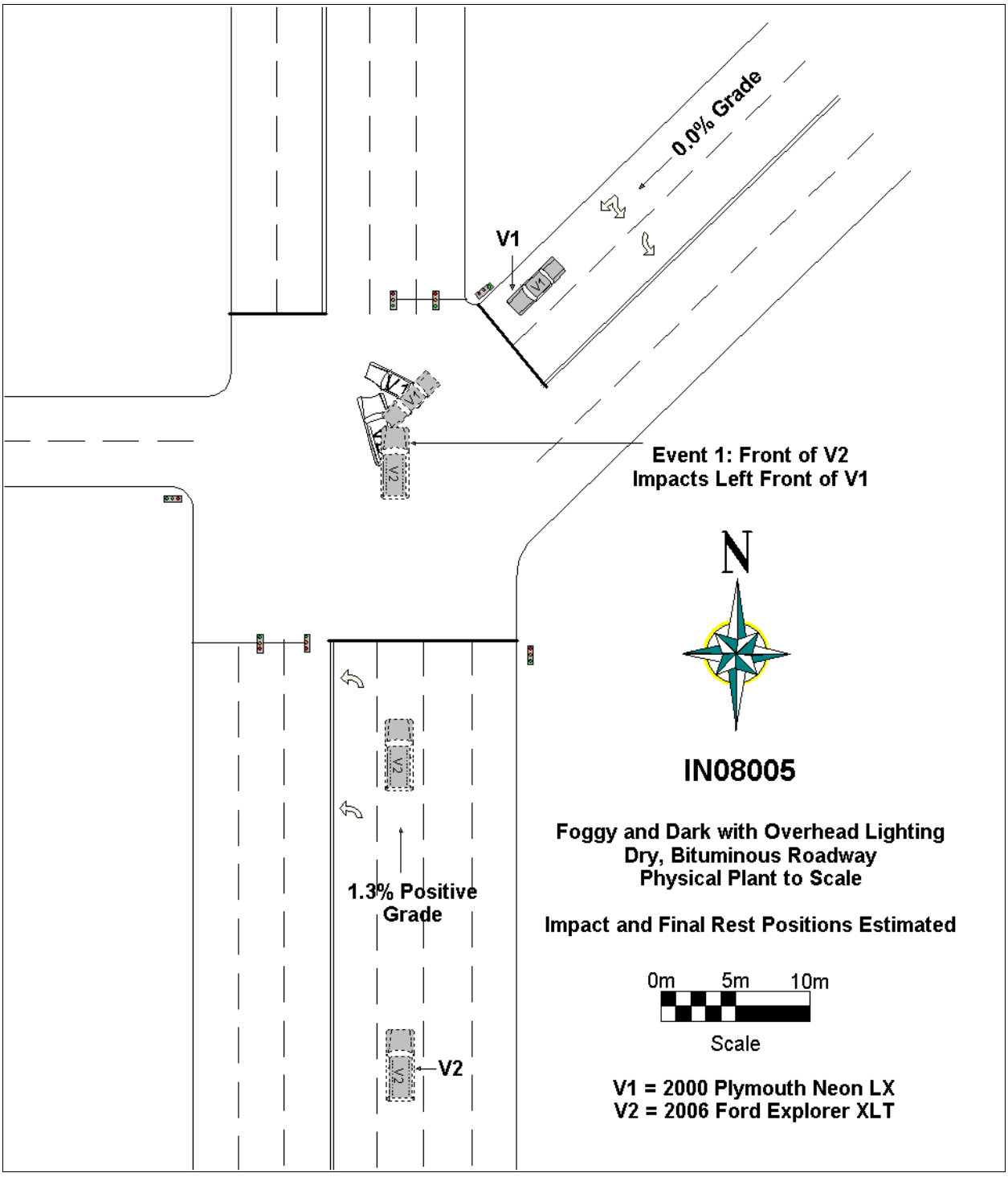
| Injury Number | Injury Description (including Aspect) | NASS Injury Code & AIS 90 | Injury Source | Source Confidence | Source of Injury Data |
|---|---|---|---|---|---|
| 1 | Blunt head trauma with reported lack of orientation and glazed look in eyes | unknown 115099.7,0 | Other interior object: child safety seat's right side | Possible | Interviewee (driver) |

**OTHER VEHICLE**

The 2006 Ford Explorer XLT was a 4-wheel drive, 4-door sport utility vehicle (VIN: 1FMEU73E76U------) equipped with driver and front right passenger air bags and 4-wheel anti-lock brakes. This vehicle was not inspected.

***Damage Classification:*** There were no photographs of the Ford available, so an estimated CDC could not be assigned. The Missing Vehicle algorithm of the WinSMASH program calculated the Ford's total Delta V as 16.0 km/h (10.0 mph). The longitudinal and lateral velocity changes were -15.8 km/h (-9.8 mph) and -2.8 km/h (-1.7 mph), respectively. The results were borderline because they are based only on the Plymouth's crush profile.

***Ford's Occupants:*** According to the police crash report, the Ford's driver (39-year-old, female) and front right passenger (24-year-old, female) were restrained by the lap-and-shoulder belt and were not injured.


0.0% Grade
V1
Event 1: Front of V2
Impacts Left Front of V1
N
IN08005
Foggy and Dark with Overhead Lighting
Dry, Bituminous Roadway
Physical Plant to Scale
Impact and Final Rest Positions Estimated
1.3% Positive
Grade
V2
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Scale
V1 = 2000 Plymouth Neon LX
V2 = 2006 Ford Explorer XLT